Sept. 18, 1951 C. B. NEPTUNE 2,568,654

CRUTCH

Filed April 29, 1946

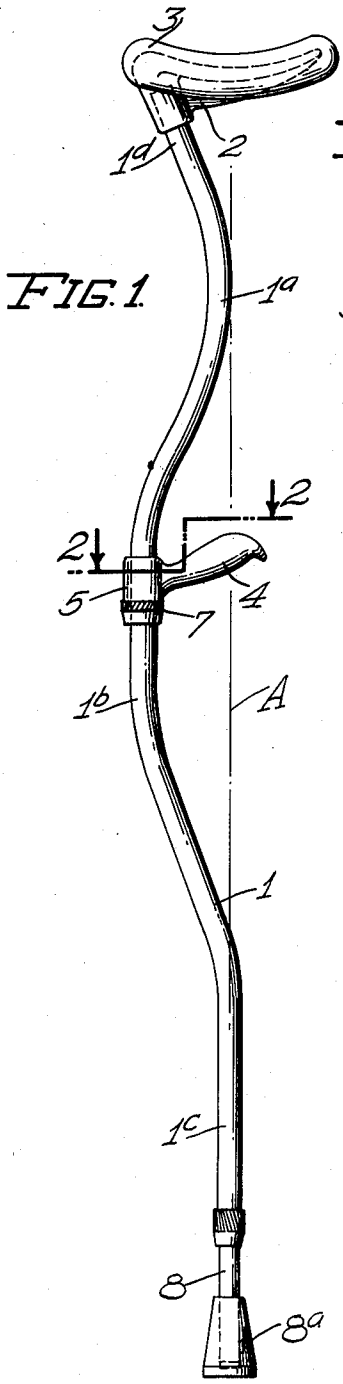

FIG. 1.

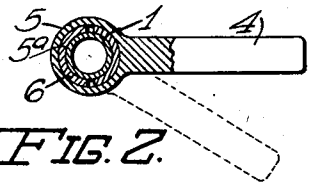

FIG. 2.

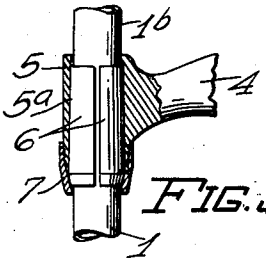

FIG. 3.

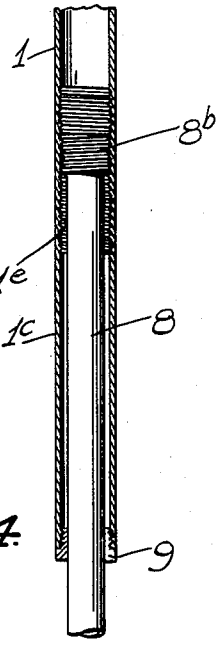

FIG. 4.

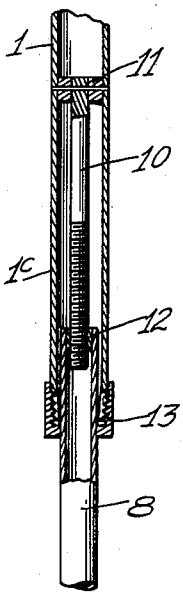

FIG. 5.

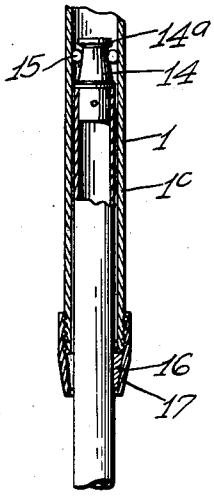

FIG. 6.

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CRUTCH

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3 Claims. (Cl. 135—50)

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My invention relates to a crutch.

One of the principal objects of this invention is to provide a crutch which is extremely durable, but which is also longitudinally resilient.

Another important object of this invention is to provide a crutch which is readily adjustable for length, and also for the hand support thereon, and in which the adjustments may be easily made but which remain fixed when made.

An important object also of this invention is to provide a hand rest which may be readily rotated to any convenient position.

A further important object of this invention is to provide simple, novel, and economical means for longitudinally adjusting the crutch.

A still further important object of this invention is to provide a crutch in which the weight applied on the arm support is in substantial alignment with the lower or leg portion of the crutch.

With these and other objects in view, as will appear hereinafter, I have devised a crutch having certain novel features of construction, combination, and arrangement of parts and portions, as will be hereinafter described in detail and particularly set forth in the appended claims, reference being had to the accompanying drawings and to the characters of reference thereon, which form a part of this application, in which:

Fig. 1 is an elevational view of a crutch, embodying my invention in a preferred form;

Fig. 2 is an enlarged sectional view thereof, taken through 2—2 of Fig. 1;

Fig. 3 is an enlarged, fragmentary, longitudinal view, partly in section, of Fig. 2;

Fig. 4 is an enlarged fragmentary longitudinal sectional view, showing one form of adjustment of the leg;

Fig. 5 is a similar sectional view thereof, showing a slightly modified form of construction; and,

Fig. 6 is another fragmentary sectional view thereof, showing still another slightly modified form of construction.

The crutch shown in the drawings has a single post 1 extending substantially the full length of the crutch from the base to the top. This post is made of tubular metal, preferably aluminum. I have found that a tubing of ⅞" outside diameter, and one having walls of 0.065" thickness, is satisfactory.

This post has substantially two bowed portions, designated 1^a and 1^b, the former being bowed backwardly and the latter forwardly. The crown of the bowed portion 1^a lies substantially in the upwardly extended axis of a lower straight portion 1^c.

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The extreme upper portion of the post is bent forwardly, as indicated by 1^d, and to the upper end is secured a bracket or arm rest 2, which may be cast in the shape shown. Over the arm rest may be drawn a flexible cover or cushion 3.

The hand rest 4, shown best in Figs. 2 and 3, is in the form of a handle 4 which extends backwardly from the bowed portion 1^b, and is directed upwardly at an angle therefrom. At the forward end of this grip or hand rest is a hub 5 having a bore through which the post extends. The bore, designated 5^a, is tapered to a small hole at its upper end. In the bore are forced two wedges 6 of semi-circular cross-section, these being forced into position by a collar 7 secured to the lower end of the hub. This construction permits the hand rest to be adjusted longitudinally on the post, and permits the hand rest or grip to be rotated without longitudinal adjustment.

In the straight portion 1^c, at the lower end of the post, is longitudinally adjustably mounted a leg 8 having a yieldable foot 8^a, preferably of rubber, at its lower end.

In Fig. 4 of the drawings, the upper end of the leg 8 is enlarged and threaded, as indicated by 8^b. This threaded portion is adjustable within a long threaded bore 1^e within the lower portion but upwardly from the lower end of the post. The intermediate portion of the leg 8 is fixed or secured in position by means of a split collar 9 at the lower end of the post 1.

In the modified structure, shown in Fig. 5, a screw 10 is positioned coaxially within the lower end of the straight portion 1^c of the post, and is secured in position at its upper end by means of an annular anchor member 11. In this instance, the upper end of the leg 8 has a threaded socket 12 into which the screw 10 is adjustably extended. The lower straight portion 1^c of the post 1 is secured to or clamped around the leg 8 by a collar 13.

In Fig. 6 of the drawings, the leg 8 is provided with a frustoconical ball race 14 at its upper end, the upper end of the race having a cap 14^a. Between the race and the interior of the wall of the post 1 are balls 15 which locate the interior of the leg within the straight portion of the post, and absolutely prevent the downward movement of the post 1 over the leg 8 when the crutch is in an upright position. The ball race 14, at the upper end of the foot, and the balls 15 may be easily inserted into the lower portion of the post by inverting the crutch. The positioning and locking means described does not prevent the leg 8 from being withdrawn

from the post 1, and for this reason I have provided a conical wedge 16 at the bottom end of the post 1, which wedge is clamped around the leg 8 by a collar 17. The wedge 16 may be either a split conical wedge or may consist of arcuate segments.

Though I have shown and described a particular construction, combination, and arrangement of parts and portions, and certain modifications thereof, I do not wish to be limited to the same, but desire to include in the scope of my invention the construction, combination, and arrangement substantially as set forth in the appended claims.

I claim:

1. A crutch, comprising a straight tubular portion open at its lower end, a leg adjustably extending into said tubular portion and provided at its inner end with a frustoconical portion, a plurality of balls located between the interior of the tubular portion and the frustoconical portion, and contractible means at the lower end of the tubular portion for retaining the leg in longitudinally adjusted position.

2. A crutch, comprising a straight tubular portion open at its lower end, a leg adjustably extending into said tubular portion and provided at its inner end with a frustoconical portion, a plurality of balls located between the interior of the tubular portion and the frustoconical portion, means at the lower end of the tubular portion for frictionally locating the leg in longitudinally adjusted position.

3. In a structure of the class described, a tubular member open at one end, a leg adjustably extending into said tubular member and provided at its inner end with a frusto-conical portion, a plurality of balls located between the interior of the tubular member and the frustoconical portion, and means at said end of the tubular member around the leg to facilitate holding the latter in adjusted position.

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